

Patent claims

1. Housing structure which has a frame structure on which there are arranged via connecting elements several optical elements which are held in mounts or structural modules, characterized in that the optical elements (5) are detachably connected to the frame structure (1) with their mounts (6) or structural modules (6') and connecting elements (7) in such a way that in the installed state they are integrated as bearing units in the frame structure (1).

2. Housing structure according to Claim 1, characterized in that the optical elements (5) are supported on mounts (6) in the form of base elements (6).

3. Housing structure according to Claim 1, characterized in that the mounts (6) or structural modules (6') are provided with setting members (8).

4. Housing structure according to Claim 3, characterized in that actuators (8) are provided as setting members between the optical elements (5) and their mounts (6) or structural modules (6').

5. Housing structure according to Claim 3, characterized in that the optical elements (5) can be adjusted in six degrees of freedom by the setting members (8).

6. Housing structure according to Claim 2, characterized in that adapting elements (10) are arranged between the base elements (6) and the frame structure (1).

7. Housing structure according to Claim 1, characterized in that the mounts (6) or structural modules (6') are connected rigidly to the frame structure (1) in six degrees of freedom via their connecting elements.

8. Housing structure according to Claim 7, characterized in that at least some of the force directions of the six degrees of freedom are located in a plate plane or strut plane of the frame structure (1).

9. Housing structure according to Claim 1, characterized in that gravity compensators (11) are arranged between the optical elements (5) and the mounts (6) or the structural modules (6').

10. Housing structure according to Claim 1, characterized in that the frame structure (1) and the mounts (6) or structural modules (6') with their connecting elements (7) have at least approximately the same coefficient of thermal expansion.

11. Housing structure according to Claim 10, characterized in that the frame structure (1), the mounts (6) or structural modules (6') and the connecting elements (7) consist of materials with a low coefficient of thermal expansion such as Zerodur or Kyocera for example.

12. Housing structure according to Claim 1, characterized by a configuration as an objective housing (9) for a projection objective in microlithography.

13. Housing structure according to Claim 12, characterized in that the objective housing (9) is provided for EUV lithography.

14. Housing according to Claim 13, characterized in that mirrors (5) are provided in the objective housing (9) as optical elements.